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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,771	03/15/2004	Soo Cho	P4066/DOOS	8632
41943	7590	12/26/2007	EXAMINER	
GWIPS			KWIECINSKI, RYAN D	
PETER T. KWON			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/799,771	Applicant(s) CHO ET AL.	
	Examiner Ryan D. Kwiecinski	Art Unit 3635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>10/19/2007</u> .                         |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application  |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                           |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,144,017 to Millett et al. in view of US 3,710,074 to Stewart in view of JP 2001349154 to Ishikawa et al. in view of US 6,660,968 B1 to Mottelet et al. in view of US 2005/024207 A1 to Schebel et al.**

#### **Claim 1:**

Millett et al. discloses a sash for windows and doors (26, Fig.2) provided with an anti-dewing hot wire (50, Fig.3), in which a double-layered glass (34,36, Fig.3), including an indoor sheet of glass (34, Fig.3) and an outdoor sheet of glass (36, Fig.3) spaced from each other by a spacer (Column 10, lines 16-17), is fixedly installed on a sash frame (32, Fig.2) including a plurality of frame members (stiles and rails, Fig.2; Column 10, lines 13-14), each of which is provided with a reception groove (section of frame above the protrusions receives the frame, Fig.3) formed in one surface thereof and a hollow formed therein (space beneath the upper protrusions, Fig.3), and an edge of the double-layered glass is sealed with a sealant (Column 10, lines 16-17), comprising:

a hot wire (50, Fig.3) for generating heat by means of supplied power, attached along an edge of the inner surface of the indoor sheet of glass (34, Fig.3) of the double-layered glass,

a through hole (98, Fig.3) for passing an electric wire electrically connected to the hot wire, formed through a designated portion of the spacer (rectangular piece inserted between glass panes, Fig.3) located on lower portions of the indoor and outdoor sheets of glass of the double-layered glass, and

a controller (30, Fig.2), which is connected to the electric wire (96, Fig.3) for controlling the output of a power supply unit for supplying a driving voltage to the hot wire according to a user's manipulation signal, located in the hollow of a lower frame of the sash frame.

Millett et al. do not disclose the spacer filled with a desiccant, nor do they disclose said power unit to include a solar power module with photovoltaic cells attached to an outer surface of the sash frame and a battery or charging unit installed in the hollow of the lower frame.

Millett et al. also does not disclose a surface temperature sensor for sensing the surface temperature of the indoor sheet of glass attached to the surface of the indoor sheet of glass, and a rated controller for comparing the surface temperature input from the surface temperature sensor to the current dew point temperature of the atmosphere, which is already stored in the rather

controller, installed in the controller or a power input terminal protruding from a sash frame and a power output terminal protruding from a window frame.

Stewart discloses the spacer filled with a desiccant (23, Fig.1).

Ishikawa et al. discloses said power unit to include a solar power module with photovoltaic cells attached to an outer surface of the sash frame and a battery or charging unit installed in the hollow of the lower frame.

Mottelet et al. disclose further comprising a surface temperature sensor for sensing the surface temperature of the indoor sheet of glass attached to the surface of the indoor sheet of glass, and a rated controller for comparing the surface temperature input from the surface temperature sensor to the current dew point temperature of the atmosphere, which is already stored in the rather controller, installed in the controller (Column 3, lines 30-59; Column 4, lines 4-8).

Schebel discloses a power input terminal protruding from a sash frame (42, Fig.7) and a power output terminal (10, Fig.7) protruding from a window frame.

It would have been obvious at the time of the invention to one of ordinary skill in the art to have filled Millett's spacer with a desiccant in order to prevent the presence of moisture inside of the sealed glass system. The use of desiccants in sealed glass panels is notoriously well known in the art.

It would have also been obvious to include the solar power module of Ishikawa et al. in the sash construction of Millett et al. The use of solar power modules including photovoltaic cells has become notoriously well know and

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popular in the art of windows and power collection. The use of solar power modules reduces the amount of electricity consumed, which in time will reduce the amount of money spent using power to heat the windows and sashes.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the temperature sensors from Mottelet's circuit in the environment of Millett's insulated glass unit, in order to automatically control the condensation system. The use of temperature sensors, which trigger controllers, on glass panes is notoriously well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the sash of Millett et al. to include power terminals that corresponded to eat other as taught by Schebel et al. The input and output terminals would therefore only contact while the sliding window assembly was closed saving energy over time.

**Claim 3:**

Millett et al. in view of Stewart in view of Ishikawa et al. in view of Mottelet et al. in view of Schebel et al. disclose the sash set forth in claim 1, Millett et al. teaches wherein the power supply unit (46, Fig.2) includes a connector (48, Fig.3) located at one side of the sash frame, which is electrically connected to an input terminal (94, Fig.3) of the controller and corresponds to a terminal of a cable so that utility power is applied to the connector through the cable.

**Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,144,017 to Millett et al. in view of US 3,710,074 to Stewart in view of JP 2001349154 to Ishikawa et al. in view of US 6,660,968 B1 to Mottelet et al. in view of US 2005/024207 A1 to Schebel et al. in view of US 4,593,175 to Bowser et al.**

Millett et al. in view of Stewart in view of Ishikawa et al. disclose the sash as set forth in claim 1, but do not disclose an insulating guide unit provided on an inner surface of the through hole, and said insulating guide unit includes a guide hole and an insulating board around the guide hole.

Bowser et al. discloses an insulating guide unit (60, 71, 74, Fig. 1) provided on an inner surface of the through hole (28, Fig. 1), and said insulating guide unit includes a guide hole (hole through which the wire is inserted, Fig. 1) and an insulating board (60, Fig. 1) around the guide hole (Bowser et al. discloses the insulating board, 60, be made of brass, or any other convenient strong durable material or another convenient securement fixture, it would then be obvious to use a material such as a plastic, etc.; also Bowser et al. discloses an adhesive used between the insulating board, 60, and the wire, this will act as a conductor).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the insulating guide of Bowser et al. in the spacer of Millett et al. in order to prevent the wire from coming in contact with the spacer as well as protect the wire from moisture and unwanted contact with additional parts of the window sash frame.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1 has been considered but are moot in view of the new ground(s) of rejection.

Applicant added claims 2 and 5 to the independent claim 1, arguing that Mottelet et al. does not disclose a rated controller as well as Ishikawa does not disclose photovoltaic cells. Mottelet et al. do in fact disclose a rated controller. Although the rated controller is used in a car window, the controller measures the temperature of the glass versus a reference temperature, reference temperature being the current dew point temperature in the current application. Ishikawa discloses a solar cell module in a window. The use of solar cells (photovoltaic cells) has become extremely well known in the art in order to reduce the amount of energy consumed when heating windows to prevent condensation and frost.

The Schebel reference has a priority date that dates back before the earliest foreign priority of the current application and therefore is applicable prior art.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan D. Kwiecinski whose telephone number is (571)272-5160. The examiner can normally be reached on Monday - Friday from 8 am to 5 pm.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on (571)272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



RDK

Robert Canfield  
Primary Examiner

